

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) 24 -05- 2005

Applicant's or agent's file reference
AA 1166

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/FI 2005/000009

International filing date (day/month/year)
07.01.2005

Priority date (day/month/year)
17.02.2004

International Patent Classification (IPC) or both national classification and IPC
B01D 21/18, B01D 21/06 // F16G 13/10, B65G 19/20

Applicant
Finnketju Invest Oy et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further opinions, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
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Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language, _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The question whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application
- ☒ claims Nos. 1-10 in part

because:

- ☐ the said international application, or the said claims Nos. _____
relate to the following subject matter which does not require an international preliminary examination (*specify*):

- ☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 1-10
are so unclear that no meaningful opinion could be formed (*specify*):

The present claims 1-10 relate to a scraper comprising an elongated, at least tension transmitting flexible structure, formed of formed pieces. However, the application provides support within the meaning of Article 6 PCT and disclosure within the meaning of Article 5 PCT, only for a scraper meant to be used for scraping of substance in a liquid basin e. g. to a surface or a bottom chute by means of a scraper bar arrangement moving in the liquid basin.

- ☐ The claims, or said claims Nos. _____ are so inadequately supported
by the description that no meaningful opinion could be formed.
- ☒ no international search report has been established for said claims Nos. 1-10 in part
- ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of
the Administrative Instructions in that:
- | | |
|----------------------------|--|
| the written form | <input type="checkbox"/> has not been furnished |
| | <input type="checkbox"/> does not comply with the standard |
| the computer readable form | <input type="checkbox"/> has not been furnished |
| | <input type="checkbox"/> does not comply with the standard |
- ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not
comply with the technical requirements provided for in the Annex C-bis of the Administrative Instructions.
- ☐ See Supplemental Box for further details.

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	2-3, 5-10	YES
	Claims	1, 4	NO
Inventive step (IS)	Claims	9-10	YES
	Claims	1-8	NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO

2. Citations and explanations:

Reference is made to the following document/documents:

D1: US 1775680 A
D2: WO 0228750 A1
D3: FI 100322 B
D4: WO 0170603 A1

D1 shows a scraper conveyor. It comprises an elongated tension transmitting flexible structure formed of two kinds of formed pieces coupled with each other, one after the other in a longitudinal direction. The pieces are arranged to twist in respect to each other round a vertical axis (5) by means of a joint arrangement that comprises edge projections (4), vertically apart and on top of each other on the end of one formed piece (3), and a centre projection in the following formed piece (1), placed between the above edge projections. A spherical bearing (6,4,1) is arranged to enable rocking of the successive formed pieces (1,3) in respect to each other.

Thus, the subject matter of claims 1, 4 is previously known and therefore lacks novelty.

The invention according to claims 2-3 differs from the scraper conveyor in D1 mainly in that all three projections in the joint comprises a hole for a joint pin and the hole in the centre projection is arranged to expand when viewed in cross section, from the centre towards its upper and lower edges.

Consequently, with the background of D1, the problem is to develop an alternative joint arrangement for obtaining twisting of two successive formed pieces around two axles.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

A solution to this problem is known from document D2, which describes a scraper chain comprising an elongated tension transmitting flexible structure formed of identical Y-shaped connector links coupled with each other, one after the other in a longitudinal direction. The links are arranged to twist in respect to each other round two axes by means of a joint arrangement where an elongated joint pin hole (26) in a centre projection of a connector link has a middle portion (27) of a lesser diameter than either end portion (28) of the elongated hole.

It is therefore considered to be obvious for a person skilled in the art to use the teachings of D2 together with prior-art as specified in D1 in order to achieve a scraper according to claims 2-3.

Accordingly, the scraper as claimed in claims 2-3 lacks an inventive step.

Furthermore, the invention as claimed in claims 5-8 is considered to lack novelty or inventive step in view of what is known from the cited documents.

In connection to claim 9 is referred to D3, which shows a scraper-beam arrangement intended to be applied to a sedimentation basin or similar where the density of the scraper-beam is appreciably less than that of the liquid to be found in the basin.

Further, D4 is referred to as an example of state of the art in the field of scraper bar devices intended for scraping of material in a liquid basin e. g. to a surface or a bottom chute by means of a scraper bar arrangement moving in the liquid basin.